

Dr. Burnett Rae," and in addition to the case-records collected by the author there are notes on a number of cases contributed from India. One appendix lists some of the better-known organizations for the promotion of spiritual healing and another gives a description of the methods of assessment of illness and of changes found, before and after visits to Lourdes. Altogether a readable and useful little book for those interested in medicine and religion and in current inquiries into spiritual healing.

I. G. H. W.

## BIOGRAPHY

**Irvine, William.** *Apes, Angels and Victorians. A Joint Biography of Darwin and Huxley.* London, 1955. Weidenfeld and Nicolson. Pp. 359. Price 21s.

THE author of this book is a Professor at Stanford University, California, and the ease with which he handles a vast mass of material calls for the greatest admiration. And his knowledge of philosophy, biology, religion and geology enables him to strip involved theories down to their bare essentials in the space of a few lines and renders the whole book a pleasure to read. Moreover it is a salutary exercise for us all to live for a while in the atmosphere of darkness and doubt, with the Bible as the only authoritative work of scientific reference, in order that we may value the freedom and the light of to-day.

Scarcely a page passes without an enlivening anecdote or an epigrammatic phrase; and it is nice to know that Huxley slapped his thigh and whispered to his neighbour at the British Association Meeting at Oxford (1860) "The Lord hath delivered him into my hands!" before he rose and committed the "forensic murder" of Bishop Wilberforce. It will be remembered that Huxley said in quiet tones that he would not be ashamed to have a monkey for his ancestor, but he would be "ashamed to be connected with a man who used great gifts to obscure

the truth." It was later declared that he had devoured alive the worthy Bishop of Oxford before the eyes of his congregation, leaving nothing but a shovel hat and a pair of gaiters visible on the platform. And it is nice to find Darwin so human that he spoke of the geology of Rio and the Andes as akin to the pleasures of gambling. "I would often," wrote Darwin, "mentally cry out 3 to 1 tertiary against primitive!—but the latter have hitherto won all the bets."

This book does much more than describe the lives of Darwin and Huxley—it carries one into the whole milieu of the times and thought, with sidelights upon all the personalities of those days. (For example Herbert Spencer, upon being asked by a lady how he accounted for his brow being so smooth and unwrinkled, replied, "Because, Madam, I am never puzzled.")

Too easily do we accept the legacy of freedom we have inherited from these great Victorians, and the author of this book deserves our gratitude for having devoted his great skill to making an enduring record of so much which otherwise must have been lost for all time.

Copious notes and an excellent index make the work complete.

C. W. USHER.

## MIGRATION

**William Petersen.** *Planned Migration: The Social Determinants of the Dutch-Canadian Movement.* Berkeley, Cal., 1955. University of California Press. Pp. x + 273. Price \$3.50.

THIS important study has a much wider scope and greater appeal to the non-specialist reader than its title indicates. Professor Petersen does not suggest that the characteristics of Dutch-Canadian migration are typical of modern international migration in general. He regards migration from the Netherlands to Canada rather as "the optimum case." The Dutch are generally welcomed as most desirable immigrants and

the view is widely held and accepted by the Netherlands Government that they have in Holland a substantial population surplus available for emigration. Dutch emigration is officially encouraged and financially assisted. On the other hand, Canada seems to have the best long-term chance "of realizing its ambitious postwar development program and thus of continuing its current rapid rate of population growth without serious disequilibrium."

What makes Petersen's analysis so valuable is the clear and well-argued distinction between factors which determine general trends and those which apply specifically to the two countries under consideration. As Professor Kingsley Davies points out in a preface: "By following out the implications of the Dutch-Canadian example, by examining critically the official and the 'scientific' theories on which migration policy is based, he has made a major contribution to the analytical literature on international migration." And it may be added that his approach to the underlying sociological, demographic and economic issues is original, well documented and of considerable interest in itself.

The first and main part of the study considers the relevant factors operating in Holland, the second part deals with the corresponding forces in Canada, the third with movements from the Netherlands to Canada, and the final section called, "Planned Migration in Practice," sums up the argument and offers some conclusions.

Holland's demographic situation is in many respects intrinsically different from that of all other European countries. Rapidly falling mortality was not followed by a corresponding fall in fertility; industrialization and the growth of cities, for a number of reasons, has not been accompanied by the spread of "urban" attitudes towards birth control to the same extent as in all other Western countries. The result was a doubling of the Dutch population during the first half of the present century as compared with an increase of 35 per cent in Britain and 6 per cent in France. In spite of prevail-

ing high standards of living, symptoms of population pressure and over-population are evident. Three methods of relieving this pressure have become socially sanctioned in the Netherlands: more industrialization, land reclamation, and emigration. Petersen tries to show why none of them is effectively fulfilling this function. He holds that the importance of emigration is enhanced by the partial failure of industrialization and the irrelevance of land reclamation (because of a causal nexus between gains in land and rise in fertility). The volume of spontaneous and Government-sponsored emigration, however, has never reached the official targets. This may be not as serious as the author suggests since to some experts these targets appear to be unnecessarily high.

Canada, Petersen argues, has the material and spiritual prerequisites for rapid development into a great industrial nation—capital, raw materials and power on the one hand, and verve and organizing ability on the other hand. What is lacking is population, and, in economic terms, the answer would seem to be the encouragement of large-scale immigration. In contrast to her needs, Canada's immigration policy has been half-hearted and restrictive. This is explained by the opposition against a more active immigration policy from the French Canadians and organized labour, by general concern with the maintenance of full employment, by the impact of racial prejudices and misgivings with regard to the cultural assimilation of the newcomers.

All these forces and contradictory tendencies are reflected in Canada's postwar immigration policy. Preferential treatment, originally reserved to British and French immigrants, has been extended to Dutch nationals. Dutch immigrants are given a preferred status as agriculturists and as Nordics. Petersen holds that "it would be impossible to justify either criterion in terms of Canada's economic and social needs"; it illustrates the irrationality of Canada's planned migration. In a country whose programme of development consists in accelerating the shift from primary to second-

ary production it is a mistake to select immigrants for their skill in agriculture. And it is as well a mistake to regard the Dutch as easily assimilable because of their "Nordic" ethnic origin. "A large percentage [of Dutch postwar immigrants] are members of narrow sects that abjure unnecessary contacts with profane society whether Dutch or Canadian. . . . It would seem that Canada's desire to facilitate the immigration of assimilable persons has been frustrated, because it is implemented in terms of invalid anthropological theories—although the degree of frustration cannot yet be determined."

There can be little doubt that serious shortcomings can be found both in Canada's and the Netherlands's planned migration. But it does not follow, as Petersen seems to suggest, that because such plans are partly shaped by irrational considerations any conscious migration policy is likely to have on balance harmful effects, that the movement of people should be allowed to develop "according to its own laws." If such laws can be derived empirically from actual movements, irrational factors will have to be included and a policy which tries to ignore them entirely is not likely to succeed. There is, however, good reason to believe that—in spite of Petersen's sceptical view—much can be achieved by a wise migration policy; tensions can be avoided, racial and social prejudices can be mitigated, advice and economic assistance can be given to intending emigrants. It is to be hoped that Petersen's stimulating analysis will be a great help on the way towards a more satisfactory and efficient control of international migration.

JULIUS ISAAC.

## RADIOISOTOPES

**Comar, C. L.** *Radioisotopes in Biology and Agriculture: Principles and Practice.* New York and London, 1955. McGraw-Hill. Pp. xiii + 481. Price 67s. 6d.

THE primary purpose of this book is to bring to the biological research worker an appre-

ciation and understanding of how the use of radioisotopes may assist him in the solution of his own problems and also to show him how the experimental work can be planned and undertaken. Throughout, emphasis has been placed on the biological and practical aspects of the subject and the copious illustrative examples are very valuable in suggesting the potentialities in various fields of research.

The first two chapters are devoted to general principles which are illustrated by examples drawn from published work in many fields and to basic difficulties in tracer methodology. Then, since the author holds the view that safety must be the first consideration and that very few investigations are worth the risk of injury to the experimenter, there is a very clear account of radiation hazards and of the practical precautions required. Recommendations on shielding, decontamination, and disposal of radioactive waste are admirably summarized.

Design and equipment of laboratories for handling radioisotopes is dealt with in the fourth chapter together with procedures for handling animals and plants. The scope of the treatment is shown by the numerous illustrations in this section which range from laboratory ground plans to the collection of urine from ambulant pigs. The fifth chapter is concerned with the collection and treatment of samples and counting procedures; here the author's policy of judicious selection rather than uncritical listing of modifications is seen to advantage.

Chapter 6, the longest in the book, is designed to present in concise form information that will enable the reader (*a*) to determine whether a certain radioisotope can be used for a particular study and (*b*) what procedures, equipment and analytical precautions will be required. To achieve this, under an alphabetical arrangement of radioactive isotopes from antimony to zirconium, all the relevant data for each element has been tabulated together with documented illustrative examples of their use.

The last four chapters consist of extensive reviews of the principles and application of corollary techniques that have been found